WHAT IS CLAIMED IS:

1. A strain measurement system, comprising:

a tunable light generator comprising a Super Luminescent light emission Diode (SLD), and a tunable Fabry-Perrot (FP) filter cascaded to an output terminal of the SLD to convert light having a wideband spectrum, which is generated in the SLD, into discrete optical signals having central wavelengths at regular intervals;

a coupler for receiving and distributing the optical signals output from the tunable light generator;

wavelength compensation means for receiving the optical signals from the tunable light generator through the coupler and detecting wavelengths of an optical signal output from the tunable light generator and passed through the FP filter;

a fiberoptic sensor unit for receiving the optical signals from the tunable light generator through the coupler and transmitting a response signal corresponding to a variation of strain attributable to load; and

an optical detector for detecting the response signal output from the fiberoptic sensor through the coupler.

2. The strain measurement system as set forth in claim 1, wherein the FP filter is provided with a thermistor and a thermoelectric element to allow temperature of the FP filter to be controlled.

3. The strain measurement system as set forth in claim 1, wherein the SLD is provided with a thermistor and a thermoelectric element to allow temperature of the SLD to be controlled.

4. The strain measurement system as set forth in claim 1, wherein the fiberoptic sensor unit is a Fiber Bragg Grating (FBG) sensor unit.

5. The strain measurement system as set forth in claim 4, further comprising a reference FBG sensor between the coupler and the FBG sensor unit to provide a reference value used for wavelength calculation of the FBG sensor unit.

6. The strain measurement system as set forth in claim 1, wherein the wavelength compensation means comprises an Ethalon filter and a second optical detector.

7. A strain measurement system, comprising:

a tunable light generator comprising a SLD, and a tunable FP filter cascaded to an output terminal of the SLD to convert light having a wideband spectrum, which is generated in the SLD, into discrete optical signals having central wavelengths at regular intervals;

a first coupler for receiving and distributing the optical signals output from the tunable light generator;

a wavelength compensation means for receiving the optical signals from the tunable light generator through the first coupler and detecting wavelengths of an optical signal output from the tunable light generator and passed through the FP filter;

a plurality of second couplers for receiving and distributing the optical signal output from the tunable light generator and passed through the first coupler;

a plurality of fiberoptic sensor units connected to the plurality of second couplers to receive the optical signals output from the tunable light generator and transmitting response signals corresponding to variations of strain attributable to load; and

a plurality of first optical detectors connected to the plurality of second couplers to detect the response signals output from the fiberoptic sensors.

8. The strain measurement system as set forth in claim 7, wherein the FP filter is provided with a thermistor and a thermoelectric element to allow temperature of the FP filter to be controlled.

9. The strain measurement system as set forth in claim 7, wherein the wavelength compensation means comprises an Ethalon filter and a second optical detector.

10. A strain measurement module for detecting signals relating to strain, which a plurality of external fiberoptic sensors experience, output from the plurality of external fiberoptic sensors, comprising:

a tunable light generator comprising a SLD, and a tunable FP filter cascaded to an output terminal of the SLD to convert light having a wideband spectrum, which is generated in the SLD, into discrete optical signals having central wavelengths at regular intervals;

a coupler for receiving and distributing the optical signals output from the tunable light generator;

a wavelength compensation means for receiving the optical

signals from the tunable light generator through the coupler and detecting wavelengths of an optical signal output from the tunable light generator and passed through the FP filter; and

an optical detector connected to the coupler to detect a response signal corresponding to a variation of strain attributable to load from the plurality of external fiberoptic sensors as response to the optical signal output from the tunable light generator.

11. The strain measurement system as set forth in claim 10, wherein the FP filter is provided with a thermistor and a thermoelectric element to allow temperature of the FP filter to be controlled.

12. The strain measurement system as set forth in claim 10, wherein the SLD is provided with a thermistor and a thermoelectric element to allow temperature of the SLD to be controlled.

13. The strain measurement system as set forth in claim 10, wherein the fiberoptic sensor unit is a FBG sensor unit.

14. The strain measurement system as set forth in claim 13, further comprising a reference FBG sensor between the coupler and the FBG sensor unit to provide a reference value used for wavelength calculation of the FBG sensor unit.

15. The strain measurement system as set forth in claim 10, wherein the wavelength compensation means comprises an Ethalon filter and a second optical detector.

16. A strain measurement module for detecting signals relating to strain, which a plurality of external fiberoptic sensors experience, output from the plurality of external fiberoptic sensors, comprising:

a tunable light generator comprising a SLD, and a tunable FP filter cascaded to an output terminal of the SLD to convert light having a wideband spectrum, which is generated in the SLD, into discrete optical signals having central wavelengths at regular intervals;

a first coupler for receiving and distributing the optical signals output from the tunable light generator;

wavelength compensation means for receiving the optical signals from the tunable light generator through the first coupler and detecting wavelengths of an optical signal output from the tunable light generator and passed through the FP filter;

a plurality of second couplers for receiving and distributing the optical signal output from the tunable light generator and passed through the first coupler; and

a plurality of first optical detectors connected to the plurality of second couplers to detect response signals corresponding to variations of strain attributable to load from the plurality of external fiberoptic sensors.

17. The strain measurement system as set forth in claim 16, wherein the FP filter is provided with a thermistor and a thermoelectric element to allow temperature of the FP filter to be controlled.

18. The strain measurement system as set forth in claim 17, wherein the wavelength compensation means comprises an Ethalon filter and a second optical detector.